Package 'animaltracker'

March 21, 2020

Title Animal Tracker

Version 0.1.0

Description Utilities for spatial-temporal analysis and visualization of animal (e.g. cattle) tracking data. The core feature is a 'shiny' web application for customized processing of GPS logs, including features for data augmentation (e.g. elevation lookup), data selection, export, plotting, and statistical summaries. A data validation application allows for side-by-side comparison via time series plots and extreme value detection described by J.P. van Brakel <https://stackoverflow.com/questions/22583391/peak-signal-detection-in-realtime-timeseries-data/>.

Depends R (>= 3.5.0)

Imports zoo (>= 1.8.6), forcats (>= 0.4.0), lubridate (>= 1.7.0), tibble (>= 2.1.0), shinyBS (>= 0.61), V8 (>= 2.0), shinyjs (>= 1.0), shiny (>= 1.2.0), shinyWidgets (>= 0.4.4), shinycssloaders (>= 0.2.0), shinythemes (>= 1.1.2), leaflet (>= 2.0.2), leaflet.extras (>= 1.0.0), dplyr (>= 0.7.5), ggplot2 (>= 3.1.0), scales (>= 1.0.0), tidyr (>= 0.8.2), sp (>= 1.3.1), rgdal (>= 1.3.6), raster(>= 2.7.15), elevatr (>= 0.2.0), geosphere (>= 1.5.7)

License GPL-3

Encoding UTF-8

LazyData true

RoxygenNote 7.0.2

NeedsCompilation no

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R topics documented:

`app_server` *Defines logic for updating the app based on user interaction in the ui*

Description

Defines logic for updating the app based on user interaction in the ui

Usage

```
app_server(input, output, session)
```

Arguments

input	see shiny app architecture
output	see shiny app architecture
session	see shiny app architecture

Value

server function for use in a shiny app

---

app_ui *Defines a user interface for the 'shiny' app*

Description

Defines a user interface for the 'shiny' app

Usage

```
app_ui()
```

Value

ui function for use in a 'shiny' app

---

boxplot_altitude *Generates a boxplot to visualize the distribution of altitude by GPS.*

Description

Generates a boxplot to visualize the distribution of altitude by GPS.

Usage

```
boxplot_altitude(rds_path)
```

Arguments

rds_path	Path of .rds animal data file to read in

Value

overall boxplot of altitude by GPS

Examples

```
# Boxplot of altitude for demo data .rds

boxplot_altitude(system.file("extdata", "demo_nov19.rds", package = "animaltracker"))
```

boxplot_time_unit *Generates a boxplot to visualize the distribution of time between GPS measurements by GPS unit.*

Description

Generates a boxplot to visualize the distribution of time between GPS measurements by GPS unit.

Usage

```
boxplot_time_unit(rds_path)
```

Arguments

rds_path	Path of .rds animal data file to read in

Value

distribution of time between GPS measurements by GPS unit, as a boxplot

Examples

```
# Boxplot of GPS measurement time differences for demo data .rds

boxplot_time_unit(system.file("extdata", "demo_nov19.rds", package = "animaltracker"))
```

calc_bearing *Helper function for cleaning Columbus P-1 datasets. Given lat and long coords in degree decimal, convert to radians and compute bearing.*

Description

Helper function for cleaning Columbus P-1 datasets. Given lat and long coords in degree decimal, convert to radians and compute bearing.

Usage

```
calc_bearing(lat1, lon1, lat2, lon2)
```

Arguments

lat1	latitude of starting point
lon1	longitude of starting point
lat2	latitude of ending point
lon2	longitude of ending point

Value

bearing computed from given coordinates

`clean_batch_df` *Cleans a directory of animal data files*

Description

Cleans a directory of animal data files

Usage

```
clean_batch_df(data_info, filters = TRUE, tz_in = "UTC", tz_out = "UTC")
```

Arguments

`data_info`	list of animal data frames with information about the data, generated by store_batch
`filters`	filter bad data points, defaults to true
`tz_in`	input time zone, defaults to UTC
`tz_out`	output time zone, defaults to UTC

Value

clean df with all animal data files from the directory

`clean_export_files` *Cleans all animal GPS datasets (in .csv format) in a chosen directory. Optionally exports the clean data as spreadsheets, a single .rds data file, or as a list of data frames*

Description

Cleans all animal GPS datasets (in .csv format) in a chosen directory. Optionally exports the clean data as spreadsheets, a single .rds data file, or as a list of data frames

Usage

```
clean_export_files(
  data_dir,
  tz_in = "UTC",
  tz_out = "UTC",
  export = FALSE,
  cleaned_filename = NULL,
  cleaned_dir = NULL
)
```

Arguments

data_dir	directory of GPS tracking files (in csv)
tz_in	input time zone, defaults to UTC
tz_out	output time zone, defaults to UTC
export	logical, whether to export the clean data, defaults to False
cleaned_filename	full name of output file (ending in .rds) when export is True
cleaned_dir	directory to save the processed GPS datasets as spreadsheets (.csv) when export is True

Value

list of cleaned animal GPS datasets

Examples

```
# Clean all animal GPS .csv datasets in the demo directory

clean_export_files(system.file("extdata", "demo_nov19", package = "animaltracker"))
```

---

clean_location_data *Cleans a raw animal GPS dataset, implementing a standardized procedure to remove impossible values*

Description

Cleans a raw animal GPS dataset, implementing a standardized procedure to remove impossible values

Usage

```
clean_location_data(
  df,
  dtype,
  filters = TRUE,
  aniid = NA,
  gpsid = NA,
  maxrate = 84,
  maxcourse = 100,
  maxdist = 840,
  maxtime = 100,
  tz_in = "UTC",
  tz_out = "UTC"
)
```

Arguments

df	data frame in standardized format (e.g., from a raw spreadsheet)
dtype	data type, iGotU or Columbus P-1
filters	filter bad data points, defaults to true
aniid	identification code for the animal
gpsid	identification code for the GPS device
maxrate	maximum rate of travel (meters/minute) between consecutive points
maxcourse	maximum distance (meters) between consecutive points
maxdist	maximum geographic distance (meters) between consecutive points
maxtime	maximum time (minutes) between consecutive points
tz_in	input time zone, defaults to UTC
tz_out	output time zone, defaults to UTC

Value

df of clean animal GPS data

Examples

```
# Clean a data frame from csv

## Read igotU data
bannock_df <- read.csv(system.file("extdata", "demo_nov19/Bannock_2017_101_1149.csv",
package = "animaltracker"), skipNul=TRUE)

## Clean and filter
clean_location_data(bannock_df, dtype = "igotu", filters = TRUE, aniid = 1149,
gpsid = 101, maxrate = 84, maxdist = 840, maxtime = 100)

## Clean without filtering
clean_location_data(bannock_df, dtype = "igotu", filters = FALSE, aniid = 1149,
gpsid = 101, maxrate = 84, maxdist = 840, maxtime = 100)

# Clean a data frame from txt

## Read Columbus P-1 data
columbus_df <- read_columbus(system.file("extdata", "demo_columbus.TXT",
package = "animaltracker"))

## Clean and filter
clean_location_data(columbus_df, dtype = "columbus", filters = TRUE, aniid = 1149,
gpsid = 101, maxrate = 84, maxdist = 840, maxtime = 100)
```

---

clean_store_batch *Cleans a directory of animal data files and stores them locally in rds format*

Description

Cleans a directory of animal data files and stores them locally in rds format

Usage

```
clean_store_batch(
  data_info,
  filters = TRUE,
  zoom = 11,
  get_slope = TRUE,
  get_aspect = TRUE,
  min_lat = data_info$min_lat,
  max_lat = data_info$max_lat,
  min_long = data_info$min_long,
  max_long = data_info$max_long,
  tz_in = "UTC",
  tz_out = "UTC"
)
```

Arguments

data_info	list of animal data frames with information about the data, generated by store_batch
filters	filter bad data points, defaults to true
zoom	level of zoom, defaults to 11
get_slope	logical, whether to compute slope (in degrees), defaults to true
get_aspect	logical, whether to compute aspect (in degrees), defaults to true
min_lat	minimum latitude for filtering, defaults to min in data_info
max_lat	maximum latitude for filtering, defaults to max in data_info
min_long	minimum longitude for filtering, defaults to min in data_info
max_long	maximum longitude for filtering, defaults to max in data_info
tz_in	input time zone, defaults to UTC
tz_out	output time zone, defaults to UTC

Value

df of metadata for animal file directory

---

compare_flags *Joins and reformats two animal data frames for the purpose of flag comparison*

Description

Joins and reformats two animal data frames for the purpose of flag comparison

Usage

```
compare_flags(correct, candidate, elev = TRUE, slope = TRUE)
```

Arguments

correct	reference df
candidate	df to be compared to the reference
elev	logical, whether to include elevation, defaults to true
slope	logical, whether to include slope, defaults to true

Value

joined and reformatted df

Examples

```
# Join and reformat unfiltered demo data and filtered demo data

compare_flags(demo_unfiltered_elev, demo_filtered_elev)
```

---

compare_summarise_daily

Compares two animal datasets and calculates daily summary statistics by GPS GPS, date, lat, long, course, distance, rate, elevation column names should match.

Description

Compares two animal datasets and calculates daily summary statistics by GPS GPS, date, lat, long, course, distance, rate, elevation column names should match.

Usage

```
compare_summarise_daily(correct, candidate, export = TRUE, out = NULL)
```

Arguments

correct	reference df
candidate	df to be compared to the reference
export	logical, whether to export summary to .csv, defaults to False
out	desired file name of .csv output summary when export is True

Value

summary df

Examples

```
# Compare and summarise unfiltered demo cows to filtered, grouped by both Date and GPS

compare_summarise_daily(demo_unfiltered_elev, demo_filtered_elev)
```

compare_summarise_data *Compares two animal data frames and calculates summary statistics. GPS, date, lat, long, course, distance, rate, elevation column names should match.*

Description

Compares two animal data frames and calculates summary statistics. GPS, date, lat, long, course, distance, rate, elevation column names should match.

Usage

```
compare_summarise_data(
  correct,
  candidate,
  export = FALSE,
  gps_out = NULL,
  date_out = NULL
)
```

Arguments

correct	reference df
candidate	df to be compared to the reference
export	logical, whether to export summaries to .csv, defaults to False
gps_out	desired file name of .csv output summary by GPS collar when export is True
date_out	desired file name of .csv output summary by date when export is True

Value

list containing gps_out and date_out as dfs

Examples

```
# Compare and summarise unfiltered demo cows to filtered
compare_summarise_data(demo_unfiltered_elev, demo_filtered_elev)
```

deg_to_dec *Helper function for cleaning Columbus P-1 datasets. Given lat or long coords in degrees and a direction, convert to decimal.*

Description

Helper function for cleaning Columbus P-1 datasets. Given lat or long coords in degrees and a direction, convert to decimal.

Usage

```
deg_to_dec(x, direction)
```

Arguments

x	lat or long coords in degrees
direction	direction of lat/long

Value

converted x

---

demo *Demo animal GPS data from cows*

Description

Demo animal GPS data from cows

Usage

```
demo
```

Format

A data frame with 2171 rows and 29 variables

---

demo_comparison *Demo comparison of two animal datasets*

Description

Demo comparison of two animal datasets

Usage

```
demo_comparison
```

Format

A data frame with 2758 rows and 33 variables

---

demo_filtered *Filtered demo animal GPS data from cows*

Description

Filtered demo animal GPS data from cows

Usage

```
demo_filtered
```

Format

A data frame with 2187 rows and 26 variables

demo_filtered_elev — *Filtered demo animal GPS data from cows with elevation appended at zoom 1*

Description

Filtered demo animal GPS data from cows with elevation appended at zoom 1

Usage

```
demo_filtered_elev
```

Format

A data frame with 2187 rows and 29 variables

demo_info — *Raw demo animal GPS data from cows with information*

Description

Raw demo animal GPS data from cows with information

Usage

```
demo_info
```

Format

A list with 10 elements

demo_meta — *Metadata for demo animal GPS data from cows*

Description

Metadata for demo animal GPS data from cows

Usage

```
demo_meta
```

Format

A data frame with 6 rows and 11 variables

demo_unfiltered — *Unfiltered demo animal GPS data from cows*

Description

Unfiltered demo animal GPS data from cows

Usage

```
demo_unfiltered
```

Format

A data frame with 2288 rows and 32 variables

demo_unfiltered_elev — *Unfiltered demo animal GPS data from cows with elevation appended at zoom 1*

Description

Unfiltered demo animal GPS data from cows with elevation appended at zoom 1

Usage

```
demo_unfiltered_elev
```

Format

A data frame with 2288 rows and 35 variables

detect_peak_modz — *Alternative implementation of the robust peak detection algorithm by van Brakel 2016*

Description

Alternative implementation of the robust peak detection algorithm by van Brakel 2016

Usage

```
detect_peak_modz(df_comparison, lag = 5, max_score = 3.5)
```

Arguments

df_comparison	output of compare_flags
lag	width of interval to compute rolling median and MAD, defaults to 5
max_score	modified z-score cutoff to classify observations as outliers, defaults to 3.5

Value

df with classifications

Examples

```
# Join and reformat unfiltered demo data and filtered demo data

detect_peak_modz(demo_comparison, lag = 5, max_score = 3.5)
```

`dev_add_to_gitignore` *Add big files to a .gitignore file*

Description

Add big files to a .gitignore file

Usage

```
dev_add_to_gitignore(data_dir)
```

Arguments

`data_dir`	directory of animal data files

Value

None

`get_data_from_meta` *Get animal data set from specified meta. If date range is invalid, automatically returns all animal data specified by meta_df.*

Description

Get animal data set from specified meta. If date range is invalid, automatically returns all animal data specified by meta_df.

Usage

```
get_data_from_meta(meta_df, min_date, max_date)
```

Arguments

`meta_df`	data frame of specified meta
`min_date`	minimum date specified by user
`max_date`	maximum date specified by user

Value

df of animal data from specified meta

get_file_meta — *Generate metadata for a directory of animal data files*

Description

Generate metadata for a directory of animal data files

Usage

```
get_file_meta(data_dir)
```

Arguments

data_dir	directory of animal data files

Value

list of data info as a list of animal IDs and GPS units

Examples

```
# Get metadata for demo directory

get_file_meta(system.file("extdata", "demo_nov19", package = "animaltracker"))
```

get_meta — *Generate metadata for an animal data frame - filename, site, date min/max, animals, min/max lat/longitude, storage location*

Description

Generate metadata for an animal data frame - filename, site, date min/max, animals, min/max lat/longitude, storage location

Usage

```
get_meta(df, file_id, file_name, site, ani_id, storage_loc)
```

Arguments

df	clean animal data frame
file_id	ID number of .csv source of animal data frame
file_name	.csv source of animal data frame
site	physical source of animal data
ani_id	ID of animal found in data frame
storage_loc	.rds storage location of animal data frame

Value

df of metadata for animal data frame

histogram_animal_elevation

Generate a histogram of the distribution of modeled elevation - measured altitude

Description

Generate a histogram of the distribution of modeled elevation - measured altitude

Usage

```
histogram_animal_elevation(datapts)
```

Arguments

datapts	GPS data with measured Altitude and computed Elevation data

Value

histogram of the distribution of modeled elevation - measured altitude

Examples

```
# Histogram of elevation - altitude for the demo data

histogram_animal_elevation(demo)
```

histogram_time

Generates a histogram to visualize the distribution of time between GPS measurements.

Description

Generates a histogram to visualize the distribution of time between GPS measurements.

Usage

```
histogram_time(rds_path)
```

Arguments

rds_path	Path of .rds cow data file to read in

Value

distribution of time between GPS measurements, as a histogram

Examples

```
# Histogram of GPS measurement time differences for demo data .rds

histogram_time(system.file("extdata", "demo_nov19.rds", package = "animaltracker"))
```

histogram_time_unit *Generates a histogram to visualize the distribution of time between GPS measurements by GPS unit.*

Description

Generates a histogram to visualize the distribution of time between GPS measurements by GPS unit.

Usage

```
histogram_time_unit(rds_path)
```

Arguments

rds_path	Path of .rds animal data file to read in

Value

distribution of time between GPS measurements by GPS unit, as a histogram

Examples

```
# Histogram of GPS measurement time differences by GPS unit for demo data .rds

histogram_time_unit(system.file("extdata", "demo_nov19.rds", package = "animaltracker"))
```

join_summaries *Joins two animal data frame summaries by a column and appends differences*

Description

Joins two animal data frame summaries by a column and appends differences

Usage

```
join_summaries(correct_summary, candidate_summary, by_str, daily = FALSE)
```

Arguments

correct_summary	summary df of reference dataset, returned by summarise_anidf
candidate_summary	summary df of dataset to be compared to reference, returned by summarise_anidf
by_str	column to join by as a string, null if daily=TRUE
daily	whether to group by both GPS and Date for daily summary, defaults to False

Value

df of joined summaries with differences

Examples

```
# Join date summaries of unfiltered and filtered demo data
## Summarise unfiltered demo by date
unfiltered_summary <- summarise_anidf(demo_unfiltered_elev, Date, Latitude, Longitude,
Distance, Course, Rate, Elevation, daily=FALSE)

## Summarise filtered demo by date
filtered_summary <- summarise_anidf(demo_filtered_elev, Date, Latitude, Longitude,
Distance, Course, Rate, Elevation, daily=FALSE)

## Join
join_summaries(unfiltered_summary, filtered_summary, "Date", daily=FALSE)
```

---

line_compare *Compares moving averages of a variable for two datasets over time, grouped by GPS GPS, Date, and col columns should match*

Description

Compares moving averages of a variable for two datasets over time, grouped by GPS GPS, Date, and col columns should match

Usage

```
line_compare(correct, candidate, col, export = FALSE, out = NULL)
```

Arguments

correct	reference df
candidate	df to be compared to the reference
col	variable to plot the moving average for
export	logical, whether to export plot, defaults to False
out	.png file name to save plot when export is True

Value

faceted line plot of moving averages over time grouped by GPS

Examples

```
# Faceted line plot comparing moving averages over time
# grouped by GPS for unfiltered and filtered demo data
## Set distance as the y axis
line_compare(demo_unfiltered, demo_filtered, Distance)
```

lookup_elevation_aws *Add elevation data from public AWS terrain tiles to long/lat coordinates of animal gps data*

Description

Add elevation data from public AWS terrain tiles to long/lat coordinates of animal gps data

Usage

```
lookup_elevation_aws(anidf, zoom = 11, get_slope = TRUE, get_aspect = TRUE)
```

Arguments

anidf	animal tracking dataframe
zoom	level of zoom, defaults to 11
get_slope	logical, whether to compute slope (in degrees), defaults to true
get_aspect	logical, whether to compute aspect (in degrees), defaults to true

Value

original data frame, with Elevation column appended

lookup_elevation_file *Add elevation data from terrain tiles to long/lat coordinates of animal gps data*

Description

Add elevation data from terrain tiles to long/lat coordinates of animal gps data

Usage

```
lookup_elevation_file(
  elev,
  anidf,
  zoom = 11,
  get_slope = TRUE,
  get_aspect = TRUE
)
```

Arguments

elev	elevation data as raster
anidf	animal tracking dataframe
zoom	level of zoom, defaults to 11
get_slope	logical, whether to compute slope (in degrees), defaults to true
get_aspect	logical, whether to compute aspect (in degrees), defaults to true

Value

original data frame, with terrain column(s) appended

`process_elevation` *Process and optionally export modeled elevation data from existing animal data file*

Description

Process and optionally export modeled elevation data from existing animal data file

Usage

```
process_elevation(
  zoom = 11,
  get_slope = TRUE,
  get_aspect = TRUE,
  in_path,
  export = FALSE,
  out_path = NULL
)
```

Arguments

`zoom`	level of zoom, defaults to 11
`get_slope`	logical, whether to compute slope (in degrees), defaults to True
`get_aspect`	logical, whether to compute aspect (in degrees), defaults to True
`in_path`	animal tracking data file to model elevation from
`export`	logical, whether to export data with elevation, defaults to False
`out_path`	.rds file path for processed data when export is True

Value

list of data frames with gps data augmented by elevation

`qqplot_time` *Generates a QQ plot to show the distribution of time between GPS measurements.*

Description

Generates a QQ plot to show the distribution of time between GPS measurements.

Usage

```
qqplot_time(rds_path)
```

Arguments

rds_path	Path of .rds animal data file to read in

Value

quantile-quantile plot to show distribution of time between GPS measurements

Examples

```
# QQ plot of GPS measurment time differences for demo data .rds

qqplot_time(system.file("extdata", "demo_nov19.rds", package = "animaltracker"))
```

---

quantile_time *Determines the GPS measurement time value difference values roughly corresponding to quantiles with .05 intervals.*

Description

Determines the GPS measurement time value difference values roughly corresponding to quantiles with .05 intervals.

Usage

```
quantile_time(rds_path)
```

Arguments

rds_path	Path of .rds animal data file to read in

Value

approximate time difference values corresponding to quantiles (.05 intervals)

Examples

```
# Read in .rds of demo data and calculate time difference quantiles

quantile_time(system.file("extdata", "demo_nov19.rds", package = "animaltracker"))
```

read_columbus — *Read and process a Columbus P-1 data file containing NMEA records into a data frame*

Description

Read and process a Columbus P-1 data file containing NMEA records into a data frame

Usage

```
read_columbus(filename)
```

Arguments

filename	path of Columbus P-1 data file

Value

NMEA records in RMC and GGA formats as a data frame

Examples

```
read_columbus(system.file("extdata", "demo_columbus.TXT", package = "animaltracker"))
```

read_gps — *Reads a GPS dataset of unknown format at location filename*

Description

Reads a GPS dataset of unknown format at location filename

Usage

```
read_gps(filename)
```

Arguments

filename	location of the GPS dataset

Value

list containing the dataset as a df and the format

`read_zip_to_rasters` *Read an archive of altitude mask files and convert the first file into a raster object*

Description

Read an archive of altitude mask files and convert the first file into a raster object

Usage

```
read_zip_to_rasters(filename, exdir = "inst/extdata/elev")
```

Arguments

`filename`	path of altitude mask file archive
`exdir`	path to extract files

Value

the first altitude mask file as a raster object

`run_shiny_animaltracker` *Run the animaltracker 'shiny' app by calling this function. Depending on the size of input files, it may be advisable to increase the maximum request size.*

Description

Run the animaltracker 'shiny' app by calling this function. Depending on the size of input files, it may be advisable to increase the maximum request size.

Usage

```
run_shiny_animaltracker(browser = TRUE, showcase = FALSE)
```

Arguments

`browser`	logical, whether to launch the app in your default browser (defaults to TRUE)
`showcase`	logical, whether to launch the app in 'showcase' mode (defaults to FALSE)

Value

None

`run_validation_app` *Run the 'shiny' validation app. Depending on the size of input files, it may be advisable to increase the maximum request size.*

Description

Run the 'shiny' validation app. Depending on the size of input files, it may be advisable to increase the maximum request size.

Usage

```
run_validation_app()
```

Value

None

`save_meta` *Save metadata to a data frame and return it*

Description

Save metadata to a data frame and return it

Usage

```
save_meta(meta_df, file_meta)
```

Arguments

`meta_df`	the data frame to store metadata in
`file_meta`	meta for a .csv file generated by get_meta

Value

df of metadata

store_batch_list — *Generates basic metadata about a directory of animal data files and stores the files as data frames as a list with the meta*

Description

Generates basic metadata about a directory of animal data files and stores the files as data frames as a list with the meta

Usage

```
store_batch_list(data_dir)
```

Arguments

data_dir	location of animal data files, in list format

Value

a list of animal data frames with information about the data

summarise_anidf — *Calculates summary statistics for an animal data frame*

Description

Calculates summary statistics for an animal data frame

Usage

```
summarise_anidf(anidf, by, lat, long, dist, course, rate, elev, daily = FALSE)
```

Arguments

anidf	the animal data frame
by	column to group by, null if daily=TRUE
lat	latitude column
long	longitude column
dist	distance column
course	course column
rate	rate column
elev	elevation column
daily	whether to group by both GPS and Date for daily summary, defaults to False

Value

df of summary statistics for the animal data frame

Examples

```
# Summary of demo data by date

summarise_anidf(demo, Date, Latitude, Longitude, Distance, Course, Rate, Elevation, daily = FALSE)
```

`summarise_col` *Get summary statistics for a single column in an animal data frame*

Description

Get summary statistics for a single column in an animal data frame

Usage

```
summarise_col(df, col)
```

Arguments

`df`	animal data frame
`col`	column to get summary stats for, as a string

Value

data frame of summary stats for col

Examples

```
# Get summary statistics for Distance column of demo data

summarise_col(demo, Distance)
```

`summarise_unit` *Summarise a number of animal datasets by GPS unit*

Description

Summarise a number of animal datasets by GPS unit

Usage

```
summarise_unit(rds_path)
```

Arguments

`rds_path`	Path of .rds cow data file to read in

Value

summary statistics for animals by GPS unit

Examples

```
# Read in .rds of demo data and summarise by GPS unit

summarise_unit(system.file("extdata", "demo_nov19.rds", package = "animaltracker"))
```

`violin_compare` *Compares summary statistics from two datasets as side-by-side violin plots*

Description

Compares summary statistics from two datasets as side-by-side violin plots

Usage

```
violin_compare(df_summary, by, col_name, export = FALSE, out = NULL)
```

Arguments

`df_summary`	data frame of summary statistics from both datasets to be compared
`by`	GPS or Date
`col_name`	variable in df_summary to be used for the y-axis, as a string
`export`	logical, whether to export plot, defaults to False
`out`	.png file name to save plot when export is True

Value

side-by-side violin plots

Examples

```
# Violin plot comparing unfiltered and filtered demo data summaries by date for a single variable
## Summarise unfiltered demo
unfiltered_summary <- summarise_anidf(demo_unfiltered_elev, Date, Latitude, Longitude,
Distance, Course, Rate, Elevation, daily=FALSE)

## Summarise filtered demo
filtered_summary <- summarise_anidf(demo_filtered_elev, Date, Latitude, Longitude,
Distance, Course, Rate, Elevation, daily=FALSE)

## Join
summary <- join_summaries(unfiltered_summary, filtered_summary, "Date", daily=FALSE)

## Violin plot

violin_compare(summary, Date, "meanElev")
```

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